

**TWO-STAGE ANNEALING METHOD FOR  
MANUFACTURING SEMICONDUCTOR SUBSTRATES**

**Abstract**

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The present invention relates to a method for manufacturing a heterogeneous material structure. The method includes forming a predetermined detachment area in a source substrate, and bonding the source substrate to a handle substrate to form a source-handle structure. The source-handle-structure is then annealed at a first energy level that is lower  
10 than the energy of a thermal detachment budget and stopping before detachment of the source substrate. Lastly, the source-handle-structure is annealed at a second energy level that is lower than the first energy level at least until the substrate detaches at the predetermined detachment area.

15